

PATENT COOPERATION TREATY

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference H100208WO/brä		FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/EP2004/005756	International filing date (day/month/year) 27/05/2004	(Earliest) Priority Date (day/month/year) 07/08/2003	
Applicant HONEYWELL SPECIALTY CHEMICALS SEELZE GMBH			

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 06 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (see Box III).

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. _____



as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.



as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP2004/005756

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

The invention relates to a process for the preparation of a substituted geminal difluoroalkane, wherein an oxime is converted to the geminal difluoroalkane using a nitrite and a complex consisting of HF and an organic base, as well as its use as an intermediate in the manufacture of pharmaceutical products.

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07C67/307 C07C69/75 C07C51/363 C07C61/15 C07C251/44

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, CHEM ABS Data, BEILSTEIN Data, WPI Data, PAJ, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>✓ TORDEUX M ET AL: "Chlorination of oximes in hydrogen fluoride: formation of gem-dihalogenoalkanes" JOURNAL OF FLUORINE CHEMISTRY, ELSEVIER SEQUOIA. LAUSANNE, CH, vol. 70, no. 2, 1 February 1995 (1995-02-01), pages 207-214, XP004020758 ISSN: 0022-1139 cited in the application scheme 3 page 208, right-hand column - page 210, paragraph 1; tables 1,3 page 212, left-hand column, last paragraph page 212, right-hand column, last paragraph - page 213</p> <p style="text-align: center;">----- -/--</p>	1-6

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

21 October 2004

Date of mailing of the international search report

18/11/2004

Name and mailing address of the ISA

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Authorized officer

Seelmann, M

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	✓ S. ROZEN ET AL.: "Conversion of the carbonyl to CF ₂ using IF" JOURNAL OF ORGANIC CHEMISTRY, vol. 56, 1991, pages 4695-4700, XP002301843 page 4698, right-hand column, last paragraph - page 4699, left-hand column, paragraph 1; table I -----	1-6
X	✓ C.G.OVERBERGER ET AL.: "Asymmetric polymers" JOURNAL OF POLYMER SCIENCE PARTA-1, vol. 10, 1972, pages 2265-2289, XP002301844 compound XI, page 2268 and preparation thereof on pages 2279-2280 -----	9
X	✓ EP 0 905 109 A (AIR PROD & CHEM) 31 March 1999 (1999-03-31) examples 11,12 -----	7
X	✓ WO 01/90106 A (PRICE DAVID ANTHONY ; PFIZER LTD (GB); WOOD ANTHONY (GB); PERROS MANOU) 29 November 2001 (2001-11-29) claims 1,3,4,9-14,37; examples 4,5 -----	7,8,10
X	✓ DATABASE CAPLUS CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; XP002301845 Database accession no. 1963:469044 abstract -----	9
X	& W. SCHNEIDER ET AL.: "Nitrogen-containing bicyclics" BERICHTE, vol. 96, no. 9, 1963, pages 2377-2386, -----	9
X	✓ DATABASE CAPLUS CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; XP002301846 Database accession no. 1960:49887 abstract -----	9
X	& K. KAHR ET AL.: "Catalytic oxidation of primary amines to oximes with hydrogen peroxide" CHEMISCHE BERICHTE, vol. 93, 1960, pages 132-136, -----	9
X	✓ US 6 262 075 B1 (MARCHINGTON ALLAN PATRICK ET AL) 17 July 2001 (2001-07-17) column 33, line 47 - line 51 preparations 9(a) and 12 column 35, line 41 - line 48; claims 8,15,16 -----	7,8,10
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	✓ DATABASE WPI Section Ch, Week 200338 Derwent Publications Ltd., London, GB; Class B05, AN 2003-397449 XP002301847 & JP 2003 012604 A (DAIKIN KOGYO KK) 15 January 2003 (2003-01-15) formula (2) on page 2; n = 1-10 (Derwent abstract) abstract -----	7
X	✓ US 4 792 618 A (BIERON JOSEPH F ET AL) 20 December 1988 (1988-12-20) compound (3), table 1claim 6 -----	7

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Information on patent family members

International Application No

PCT/EP2004/005756

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